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TS # 141 885

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Director of Central Intelligence

Briefing of

**CIA Subcommittee,
Senate Armed Services Committee**

**Given on
16 January 1959**

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SOVIET BALLISTIC MISSILE CAPABILITIES

1. I want to make it perfectly clear that everyone in the intelligence community takes with the greatest seriousness the Soviet capability in ballistic missiles, and in particular the USSR's emerging capability to have operational missiles of intercontinental range. While the views of competent experts may differ slightly as to the exact timing of a particular Soviet threat, our national intelligence estimates credit the USSR with a present operational capability with ballistic missiles of up to 700 nautical miles and probably 1,100 nautical miles range. Our estimates warn that the US now faces the possibility, soon to be a probability, that the Soviets have operational ICBMs, and we have stated our belief that upon achieving an initial ICBM capability, the Soviets would build toward a substantial force of ICBMs as rapidly as practicable.

2. Our estimates on Soviet missile programs and capabilities are under constant review. Since I briefed you last August, we have conducted a thorough re-analysis of all evidence on the

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Soviet ICBM program, to determine the possible impact on our estimates of an apparent recent lag in test firings. Participating were the Guided Missile Intelligence Committee of the United States Intelligence Board and a panel of high-level consultants from other areas of government and from industry.

3. Among the major objectives of this review were:

- a. to reassess the possibility of undetected Soviet ICBM test firings;
- b. to review any evidence of operational bases and facilities;
- c. to ensure that our estimates of deployment and production time schedules were reasonable.

Soviet Ballistic Missile Testing

4. Testing to distances up to about 1,000 n. m. takes place at Kapustin Yar range, on which we have had coverage by multiple sources since mid-1953. Testing to about 3,500 n. m., as well as earth satellite launchings, conducted from Tyura Tam, where range facilities became operable in the summer of 1957. Believe these two ranges are the only existing ballistic missile test ranges in

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the USSR; their facilities are adequate to support even an expanded flight test program.

5. Test firings continue at Kapustin Yar. Total ballistic missile firings since 1953 to distances up to 700 n.m. now more than 400, including more than 50 since 1 August 1958 (about the time I last briefed you). Total to about 1,000 n.m. now 22, including 11 since 1 August.

6. We continue to estimate that Soviet has operational missiles with maximum ranges of 100, 200, 350, and 700 n.m. Estimate 1,100 n.m. missile probably now available for operational use.

Present Capabilities, 700 and 1,100 Ballistic Missiles

7. On the basis of available intelligence, we cannot judge the present scale of production and we have not identified any units equipped with these missiles.

8. It is possible that at present the USSR has only a very limited capability to employ them in military operations. But considering such factors as estimated Soviet requirements, nuclear materials availability, and experience in shorter range missiles, we believe that the USSR may now have an operational capability with as many as several hundred ballistic missiles of

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9. Missiles of these ranges are probably designed for road or rail mobility. They are probably not deployed in Satellite areas at present, but some operational units may exist within the USSR. (Note that last fall we received evidence that one or more Soviet units equipped with 100 n.m. missiles and mobile launching facilities may have been deployed to East Germany).

Intercontinental Ballistic Missile

10. Estimated total of ICBM firings to 3,500 n.m. remains at six, the first in August 1957, and the most recent in May 1958. Three Sputniks also successfully launched, the most recent in May 1958; Lunik early this month. Have also been three other ICBM attempts (most recent in December) which may have been unsuccessful, and four attempts to launch space vehicles of unknown nature (most recent early in December), which apparently did not achieve orbit or accomplish other purposes sufficiently to warrant any public announcements.

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of its nature, certain details of this system known to only a

limited number of persons in the intelligence community. We

believe that this system is efficient, and that, for example, no significant number of test firings to 3,500 n.m. has passed unnoticed.

12. Have very carefully checked adequacy of coverage, with reference to various reports of large numbers of firings to 3,500 n.m. or more. Neither we in CIA, nor the heads of the other intelligence agencies of government, nor the responsible analysts at any level with competence in this field, have information to support figures larger than those I have just given. While all details of the firings may require considerable analysis, receipt of information as to the occurrence of a firing involves no time lag.

13. Have no evidence and do not believe there have been firings from rangeheads in southern USSR into the Arctic region, nor ICBM firings with live thermonuclear warheads. However, a low-yield nuclear explosion several years ago at Kapustin Yar believed test of warhead in shorter-range ballistic missile.

14. Initial success of ICBM and earth satellite launchings leads to belief that components flight-tested at Kapustin Yar prior to August 1957. Undoubtedly there has also been considerable ICBM static testing, on which we would not expect to get

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Conclusions, First Operational Capability

15. The number of Soviet test firings to 3,500 n.m. over the past year has not been as great as we had anticipated. Nevertheless, considering the Soviets' progress in the whole field of missiles and the capabilities demonstrated in their ICBM, earth satellite, and other ballistic missile launchings, the USIB continues to estimate without dissent that the USSR will probably achieve a first operational capability with, say, ten prototype ICBMs at some time during 1959.

16. It remains possible that a limited capability with comparatively unproven ICBMs might have been established in 1958, but we believe this to be unlikely.

17. In this connection, some statements by high Soviet officials during the past year have indicated that the USSR already possessed, or at least wished us to think it possessed, a considerable operational ICBM capability.

18. Such a capability cannot be ruled out as impossible if the Soviets have had a test philosophy involving fewer long-range tests and more reliance upon component tests at Kapustin Yar than we think likely. Such a philosophy would run greater risks of failure and provide less assurance of accuracy and reliability

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but also (if all went well) much more rapid achievement of operational capability.

19. The Soviets may have believed the political and psychological value of ICBMs is so great as to justify extreme measures to attain a substantial and early deployment.

ICBM characteristics

20. Estimate of characteristics of Soviet ICBM remains unchanged:

a. Range about 5,500 n.m. (Khrushchev's claim to Senator Humphrey regarding a 7,500 n.m. missile for which they have no test range long enough, probably refers to this same ICBM. We believe it could be modified to achieve such a distance but that this is more than the USSR requires.)

b. Designed warhead weight estimated at 2,000 pounds, with possibility that it is designed to carry 5,000 pounds.

c. Accuracy (CEP) about 5 nautical miles.

d. Reliability after launch 50 percent.

e. Reliability and accuracy capable of considerable improvement by the early 1960's.

Production and Deployment

21. In this area our evidence is, in our opinion, unsatisfactory, and we are continuing on a highest-priority basis our efforts to acquire the information we must have.

22. Some additional fragments have been acquired very recently, indicating that production of ballistic missiles was under way at several Soviet plants during 1951 to 1956. On November 12, 1958, in a speech to the Central Committee about the forthcoming Seven Year Plan, Khrushchev stated that the production of ICBMs had been "successfully set up. Khrushchev's statement is not inconsistent with the emerging ICBM capability which we estimate.

23. Members of the Soviet delegation to the Geneva technical conference on prevention of surprise attack have implied or specifically claimed that the USSR already has operational ICBMs. One said ICBMs are in "mass production" and that "operational bases" now exist in "more than token numbers. This same individual made a similar claim a full year ago.

24. In our reexamination we took account of the Soviet emphasis on reliability and simplicity in ballistic missile design, of their considerable experience in shorter-range missiles, and

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of their probable philosophy of making maximum use of proven components in developing longer-range systems. On the basis of these factors, we believe that the Soviets would not necessarily require a large number of ICBM flight tests before entering the production. We have insufficient evidence to judge the present magnitude and pace of a Soviet program to produce and deploy ICBMs, and we consider it prudent to assume that such a program is under way. But we also believe that additional test firings at an increased rate will be required if our estimate of time schedule is to be met.

Conclusions, Future Operational Capabilities

25. Taking into account the complexities of the tasks which would have to be accomplished, we believe that the Soviets could achieve an operational capability with 500 ICBMs about three years after first operational capability date. Based on our estimate that a first operational capability will probably be achieved some time in 1959, we therefore believe that a capability with 500 ICBMs could be achieved some time in 1962. With overriding priority and exceptional success in their test and production program, this capability might be achieved in as little as two years after first operational capability date, i. e., some time in 1961. Assuming a build-up in three years from first operational capability

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to a capability with 500 ICBMs, a capability with 100 ICBMs would be achieved in about a year and a half; assuming a two-year buildup, 100 would be achieved in about a year. Thus, we think it probable that the Soviets could achieve an operational capability with 100 ICBMs some time during the period from the beginning of 1960 to mid-1961.

26. Since there is no direct evidence on Soviet plans for quantity production of ICBMs, we have selected the figures of 100 and 500 operational missiles as yardsticks to provide a basis for measuring capacity to produce and deploy these weapons. We recognize that reasonable men might differ as to the Soviet capacity to have 500 operational ICBMs in 1961 or 1962. It is, however, the opinion of the qualified consultants with whom we have conferred, that in the light of such data as we have on the Soviet program, our estimates of the pertinent Soviet capabilities are reasonable.

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Soviet Naval Forces

1. The postwar building program has contributed to the expansion of the submarine force which now numbers approximately 440 boats. This strength, incidentally, is more than eight times the submarine strength with which Germany entered World War II, and is greater than Germany's peak sub strength in May 1943. More than half of these submarines are snorkel-equipped, long-range units of postwar design and construction.

2. Due to a probable transition to new types of naval construction, there has been little quantitative change in Soviet naval forces since last year. The estimated strength of Soviet naval forces in addition to their submarine fleet is 28 cruisers, about 140 destroyers and 80 destroyer escorts, and more than 2,000 minor combat and auxiliary ships. Soviet naval forces are grouped in four major forces: the Northern Fleet, located in the Barents Sea area; the Baltic Fleet; the Black Sea Fleet; and the Pacific Fleet, concentrated largely at Vladivostok.

3. The surface forces are supported by Soviet Naval Aviation, which comprises more than 15 percent of total Soviet air

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strength and is now the second largest naval air force in the world. We believe that selected naval bomber units have been assigned an atomic delivery role and there is evidence of a developing air-to-surface missile capability in naval BADGER units. Lack of aircraft carriers limits the operational effectiveness of Soviet Naval Aviation to the combat radius of its shore-based aircraft.

Submarine Launched Missiles

4. The Soviet navy probably now has the capability to launch subsonic cruise-type missiles from a few converted submarines of conventional design. We estimate that the current system could deliver nuclear warheads against land targets within about 200 n. m. of the launching submarine. These cruise-type missiles could be launched by a submarine only after surfacing.

5. We believe that in 1961-63 the USSR will probably have a submarine-launched ballistic missile system available for first operational use in a prototype submarine of new design. This system will probably be capable of delivering a nuclear warhead

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from a submerged submarine to a range of about 1,000 n. m.

Have some recent leads on existence of such a program in the USSR.

Submarine Construction

6. The USSR will probably continue to place primary emphasis on submarines in its naval construction program. Since 1950 the Soviets have built about 290 submarines of the medium and the long-range classes. Termination probably marked the initiation of new submarine programs. A new class of conventionally-powered long-range submarine has been in production at Leningrad since the beginning of 1958. This class is apparently a large torpedo-attack type, with improved sonar. Four of this class submarine are believed to have reached operational status.

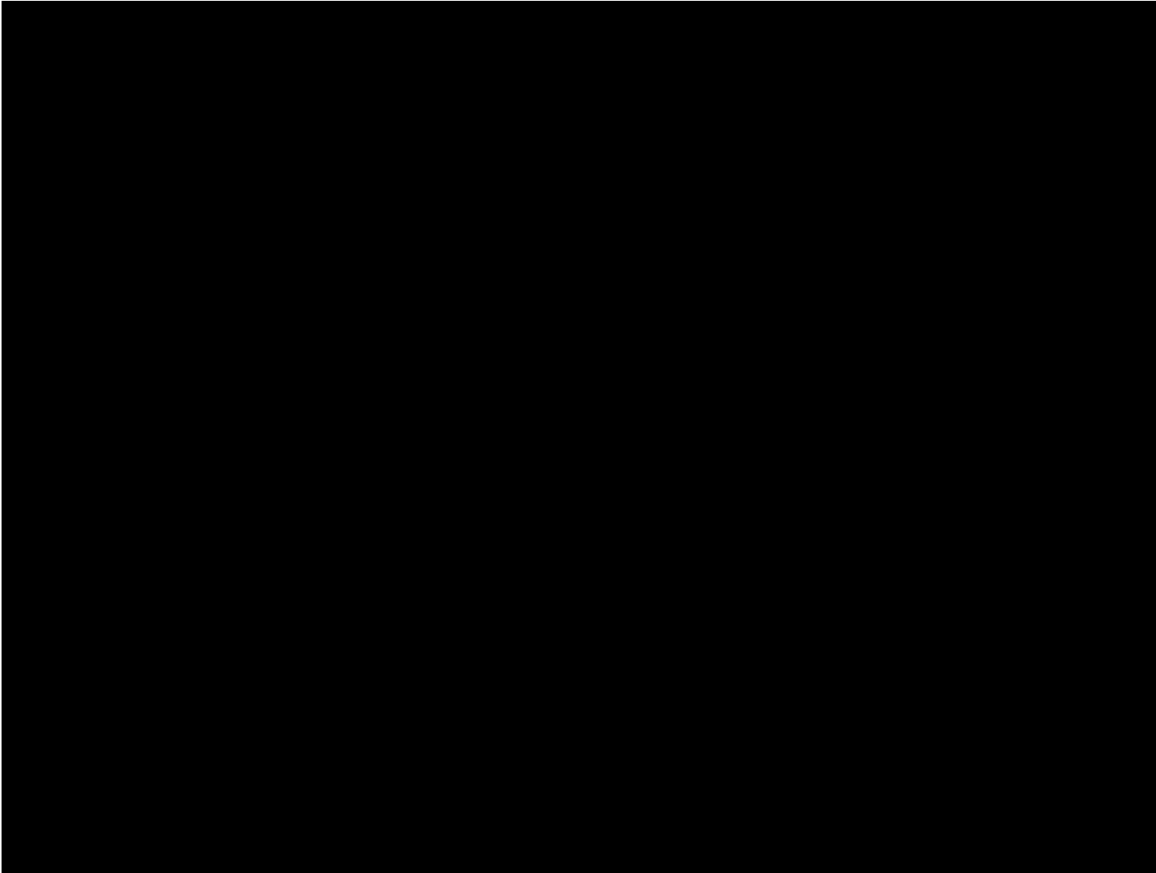
7. Additional submarine programs believed to be underway include a nuclear-propelled type and submarines specifically designed to employ guided missiles.

8. Although the evidence is not firm, we believe that the USSR may already have commissioned one or more nuclear-powered

submarines. (Unconfirmed covert reports say they have several.)
Soviet capabilities in this field have been indicated by the launching
of the icebreaker Lenin, which will probably become operational
in 1959. The Lenin is powered by three nuclear reactors of a
type which would be suitable, with some redesign, for use in a
submarine. We estimate that by mid-1963 the USSR may possibly
have about 25 nuclear-powered submarines.

Nuclear Weapons

1. Since you were last briefed, the Soviets resumed testing in a second series of about 18 shots which began in September 1958.



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Long Range Bomber Force

1. The USSR has devoted a major effort to the development of nuclear striking forces capable of attacking distant targets in and near Eurasia as well as in North America. The principal

component of Soviet military strength which can now launch nuclear attacks against these distant targets is Long Range Aviation, equipped with medium and heavy bombers. The estimated strength of Long Range Aviation is approximately 1,450 bombers, including about 400 obsolete BULL piston medium bombers, about 950 BADGER jet medium bombers, and about 100 to 125 BISON jet and BEAR turboprop heavy bombers.

2. Attacks by Long Range Aviation on US targets would require extensive use of one-way missions.

3. The USSR is continuing to develop new aircraft models, the latest of which is a new bomber, designated BOUNDER.

4. This aircraft is of large size and heavy weight, with a modified delta-wing configuration. The fuselage forward of the wing appears to be exceptionally long for an aircraft powered by conventional fuel although preliminary analysis indicates that BOUNDER is powered by four turbojet engines. It has not been possible to determine the intended mission of this aircraft, but we believe it could represent a significant step forward in bomber design, although present engines do not appear to give it inter-continental radius.

5. Some members of the intelligence community believe that there is a possibility that the BOUNDER may represent a developmental step in Soviet achievement of a nuclear powered aircraft, but the majority believe this unlikely. If the BOUNDER proves to be a developmental model intended for use with nuclear propulsion, extensive modification and a long period of further development would be required before it would be available in operational units.

6. Regardless of whether the BOUNDER is an early version of a nuclear powered aircraft we estimate that within the next few years the USSR could fly an airborne nuclear test bed with at least one nuclear power unit providing useful thrust during some portion of the flight.